

ABSTRACT

A method of cleaning ultrafiltration or microfiltration membranes reduces the rate of decline in the permeability of the membranes so that intensive recovery cleaning is required less frequently.

- 5 In one aspect, cleaning events using a chemical cleaner are started before the membranes foul significantly and are repeated between 1 and 7 times per week. The product of the concentration of the chemical cleaner expressed as an equivalent concentration of NaOCl and the duration of all cleaning events is between 2,000 minutes•mg/l and 30,000 minutes•mg/l per week.
- 10 When performed in situ, each cleaning event comprises (a) stopping permeation and any agitation of the membranes, (b) backwashing the membranes with a chemical cleaner in repeated pulses and (c) resuming agitation, if any, and permeation. The pulses last for between 10 seconds and 100 seconds and there is a time between pulses between 50 seconds and
- 15 6 minutes. Each cleaning event typically involves between 5 and 20 pulses. In another aspect, cleaning events using a pulsed backwash of heated water are similarly started before the membranes foul significantly and are repeated between twice a day and once every two days.

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